

Rabbit Hemorrhagic Disease

Rabbit hemorrhagic disease (RHD) is a highly infectious viral disease of the European rabbit (*Oryctolagus cuniculus*). This is the species from which all U.S. domestic and commercial rabbits are derived. American cottontail rabbits and jackrabbits are not susceptible to infection. RHD is not known to harm humans or other animals. Once the disease is introduced into a rabbitry, it can spread rapidly, causing a high percentage of the rabbits to die. There is no treatment for the disease.

Recent History

In 1984, RHD was reported for the first time in the People's Republic of China. Since then, RHD has been reported in parts of Asia and Europe, including the Czech Republic, Germany, France, Italy, Korea, and Spain. Investigations suggest the disease spread from country to country through shipments of contaminated rabbit meat and infected live rabbits.

The first report of RHD in the Western Hemisphere came in December 1988, when the disease was detected in domestic rabbits in the Mexico City area. The outbreak was traced to a shipment of 18 metric tons of frozen rabbit carcasses from China that had been delivered to a supermarket chain outside Mexico City.

In February 1989, the Mexican government began a control and eradication program that included quarantine of infected farms, prohibition of movement or sale of rabbits, voluntary destruction of diseased rabbits, and cleaning, disinfecting, and repopulating premises after a 2-month waiting period. The campaign was successful; there were no reported cases in 1992. Mexico is the only country to succeed in eradicating RHD.

Clinical Signs

RHD damages the liver, intestines, and lymphatic tissue and causes terminal massive blood clots. The incubation period is about 24 to 48 hours. Predominantly, young adult and adult rabbits die suddenly within 6 to 24 hours of the onset of fever with few clinical signs. Fever may be as high as 105 °F (40.5 °C) but often is not detected until rabbits show terminal clinical signs. Most animals appear depressed or reluctant to move in the final hours and may show a variety of neurologic signs, including

excitement, incoordination, paddling, and opisthotonos (abnormal position of the head due to spasms of the muscles at the top and back of the neck). Some affected rabbits may have a foamy nasal discharge. The death rate for RHD ranges from 50 to 100 percent.

How RHD Spreads

RHD is caused by a highly contagious virus. The disease can be transmitted by contact with infected rabbits, rabbit products, rodents, and contaminated objects, such as cages, feeders, and clothing. The virus also may be carried short distances through moisture in the air. The risk of spread of RHD is higher when confined rabbits are in close contact with each other. Infected rabbits that recover may become carriers of the virus and may shed virus for at least 4 weeks.

Impact of Disease Spread

If RHD was to become established in the United States, it would have a significant impact on domestic rabbits in North America. Producers of domestic rabbits receive about \$10 million each year from the sale of rabbit meat and pelts in the United States. The value of rabbits raised for research in the United States is about \$15 million a year.

This estimated value of \$25 million a year does not take into account several factors. One factor is the impact on availability of rabbits for research and the production of medical diagnostic materials. Another factor not taken into account is the value, both monetary and emotional, of the pet and show rabbit industry.

Disease Prevention

To protect against introducing RHD into the U.S. rabbit population, owners and producers should avoid contact between their rabbits and imported rabbit meat, pelts, or other possibly contaminated objects from RHD-affected countries.

To prevent the spread of the disease if it enters the United States, rabbit owners should prevent contact between healthy rabbits and infected rabbits and contaminated objects (e.g., cages, feeders, and clothing). Rabbits that appear healthy can be in the early stage of disease and later spread the disease. Recovered rabbits also appear healthy but can be carriers for at least 4 weeks and spread the disease to other rabbits.

Owners should be cautious and isolate new rabbits and rabbits returning from shows for at least 5 days. If rabbits were exposed to RHD, isolation may help prevent spread to other rabbits. Clinical disease usually will be noticeable within 48 hours of infection.

If RHD is suspected, to prevent spread of the virus, rabbit owners should clean and disinfect all equipment. After thorough cleaning, rabbit breeders should use one of the following disinfectant solutions on equipment to inactivate the virus: 2-percent 1-Stroke Environ_ (Steris Corporation, St. Louis, MO), 0.5-percent sodium hypochlorite, or 10-percent household bleach.

Vaccine

No vaccine is legally available for use in the United States. Vaccine has been used in other countries. Vaccination often reduces the number of rabbits dying from RHD, but will not eradicate the disease. Rabbits vaccinated against RHD may become infected but not show signs of disease, thereby allowing spread of the virus as a carrier.

Report Possible Disease

Veterinarians and rabbit owners who suspect a rabbit may have RHD should immediately contact State or Federal animal health authorities.

For more information, contact

U.S. Department of Agriculture
Animal and Plant Health Inspection Service
Veterinary Services, Emergency Programs
4700 River Road, Unit 41
Riverdale, MD 20737-1231
Telephone: (301) 734-8073
Fax: (301) 734-7817

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